

## ABSTRACT

A power generation system includes a turbogenerator having a motor/generator and a turbine coupled to a common shaft, and generates AC power. A first power converter is coupled to the turbogenerator and a DC bus and  
5 converts the AC power to DC power on the DC bus. A second power converter is coupled to the DC bus and is couple-able to a load. The second power converter converts the DC power on the DC bus to an output power for coupling to the load. Also coupled to the DC bus are a battery and a capacitor to stabilize a DC voltage on the DC bus during load changes. The power generation system further includes a  
10 power controller coupled to the turbogenerator and the first and second power converters. The power controller regulates a speed of the turbine, independent of the DC voltage on the DC bus.